

REMARKS

Applicant will address each of the Examiner's objections and rejections in the order in which they appear in the Office Action.

Claim Objections

The Examiner objects to Claims 43, 47-55, 62 and 65 because the inequity sign is missing. Applicant has now amended the claims to include the appropriate sign. Accordingly, it is requested that this objection be withdrawn.

Claim Rejections – 35 USC §103

The Examiner also rejects Claims 1-72 under 35 USC §103 as being unpatentable over Ikeda in view of Wortman. This rejection is respectfully traversed.

One feature of the claimed invention is to use a light scattering body in a self-light emitting display device. As a result, a self-light emitting display device with a high efficiency of light emission can be achieved. The Examiner, however, contends that Ikeda discloses a EL display device except for a light scattering body, that Wortman teaches a light directing film, and that it would have been obvious to combine these two references to arrive at the claimed invention. Applicants respectfully disagree.

In particular, the purpose of the light directing film in Wortman is to reduce the amount of energy for a light source in a device driven by battery power, such as laptop computers, calculators, digital wristwatches, or cellular telephones (see col. 1, lns. 23-27 in Wortman). In contrast, the purpose of the present invention is to increase the amount of light extracted from a light emitting display device. Further, it appears that the light directing film in Wortman is used in an external light

source for laptop computers, calculators, digital wristwatches, or cellular telephones. In contrast, it is generally known that an EL display device (such as that claimed in the present application) emits light by itself and does not need such an external light source. Therefore, since the EL display device does not require an external light source, there is no reason to incorporate the teaching in Wortman in the EL display device in Ikeda. Hence, the combination of references is improper, and the rejection based thereon should be withdrawn.

Additionally, Claims 20, 21, 22, 33, 45, 54, 56 and 71 are further distinguishable over Wortman and the cited references, since the cited references do not disclose or suggest that “an angle between the light scattering body and the second surface is not less than 60° and is less than 180°” as recited in these claims.

Furthermore, Claims 14, 15, 16, 31, 43, 47, 62 and 69 can also be distinguished over Wortman and the cited references, since the cited references do not disclose or suggest that “a thickness (H) of the light scattering body has a relation of $H \geq W1$ with respect to a pitch (W1) of the light scattering body,” as recited in these claims.

Claims 17, 18, 19, 32, 44, 53, 63 and 70 are also distinguishable over Wortman and the cited references since the cited references do not disclose or suggest that “a pixel pitch is at least twice as long as a pitch of the light scattering body,” as recited in these claims.

Accordingly, for at least the above-stated reasons, the claims of the present application are patentable over the cited references. Therefore, it is requested that this rejection be withdrawn.

New Claims

Applicant is adding new Claims 73-77 herewith. Please charge our Deposit Account 50/1039 for any fee for these claims.

Conclusion


Accordingly, the present application is now in a condition for allowance and should be allowed.

If any further fee is due for this amendment, please charge our Deposit Account 50/1039.

Favorable reconsideration is earnestly solicited.

Respectfully submitted,

Date: July 7, 2003


Mark J. Murphy
Registration No. 34,225

COOK, ALEX, McFARRON, MANZO,
CUMMINGS & MEHLER, LTD.
200 West Adams Street
Suite 2850
Chicago, Illinois 60606
(312) 236-8500

Marked-up copy of the claims as amended:

IN THE CLAIMS:

Please amend the claims as follows:

Cancel Claim 1.

2. (Amended) A self-light emitting display device comprising:

a first electrode formed on an insulator;

an EL layer formed on the first electrode;

a second electrode formed on the EL layer; and

a light scattering body formed at a side opposite to the first electrode through the insulator,

wherein said first electrode is electrically connected to a TFT.

5. (Amended) A self-light emitting display device comprising:

a first electrode formed on an insulator;

an EL layer formed on the first electrode;

a second electrode formed on the EL layer; and

a light scattering body formed at a side opposite to the first electrode through the insulator.

26. (Amended) A self-light emitting display device comprising:

a first electrode formed on an insulator;
an EL layer formed on the first electrode;
a second electrode formed on the EL layer; and
a light scattering body formed on the surface facing a material with the lowest refractive index.

37. (Amended) A self-light emitting display device comprising:

a substrate;
a first electrode formed over a first surface of the substrate;
an EL layer formed on the first electrode;
a second electrode formed on the EL layer; and
a light scattering body formed over a second surface of the substrate which is opposite to the first surface.

43. (Amended) A self-light emitting device according to claim 37, wherein a thickness (H) of the light scattering body has a relation of $H \geq W1$ with respect to a pitch (W1) of the light scattering body.

47. (Amended) A self-light emitting display device comprising:

a substrate;
a first electrode formed over a first surface of the substrate;
an EL layer formed on the first electrode;

a second electrode formed on the EL layer; and

a light scattering body formed over a second surface of the substrate which is opposite to the first surface,

wherein a thickness (H) of the light scattering body has a relation of $H \geq W1$ with respect to a pitch (W1) of the light scattering body.

56. (Amended) A self-light emitting display device comprising:

a substrate;

a first electrode formed over a first surface of the substrate;

an EL layer formed on the first electrode;

a second electrode formed on the EL layer; and

a light scattering body formed over a second surface of the substrate which is opposite to the first surface,

wherein an angle between the light scattering body and the second surface is not less than 60° and is less than 180°.

62. (Amended) A self-light emitting device according to claim 56, wherein a thickness (H) of the light scattering body has a relation of $H \geq W1$ with respect to a pitch (W1) of the light scattering body.

65. (Amended) A self-light emitting display device comprising:

a substrate;

a first electrode formed over a first surface of the substrate;
an EL layer formed on the first electrode;
a second electrode formed on the EL layer; and
a light scattering body formed over the second electrode.

69. (Amended) A self-light emitting device according to claim 65, wherein a thickness (H) of the light scattering body has a relation of $H \geq W1$ with respect to a pitch (W1) of the light scattering body.

Please add the following new claims:

73. (New) A self-light emitting display device comprising:
a substrate having a first surface and a second surface opposite to each other;
a plurality of light emitting elements arranged in a matrix form over the first surface of the substrate; and
a light scattering body adjacent the second surface of the substrate.

74. (New) A self-light emitting display device comprising:
a substrate having a first surface and a second surface opposite to each other;
a passivation film formed over the plurality of light emitting elements;
a sealing film formed over the passivation film;
a sealing substrate formed over the sealing film; and

a light scattering body formed over the sealing substrate.

75. (New) A self-light emitting display device comprising:

a substrate having a first surface and a second surface opposite to each other;

a passivation film formed over the plurality of light emitting elements;

a light scattering body formed over the passivation film.

76. (New) The self-light emitting display device according to claim 74, wherein the passivation film comprises at least one of silicon nitride and carbon film.

77. (New) The self-light emitting display device according to claim 75, wherein the passivation film comprises at least one of silicon nitride and carbon film.